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| 10/640,747      | 08/14/2003  | William W. Lu        | 100.529US01         | 9204             |

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| EXAMINER |
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JACOB, MARY C

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| ART UNIT | PAPER NUMBER |
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2123

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE  | DELIVERY MODE |
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| 3 MONTHS                               | 12/21/2006 | PAPER         |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/640,747

Applicant(s)

LU ET AL.

Examiner

Mary C. Jacob

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date 8/14/03.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. Claims 1-22 have been presented for examination.
2. The Preliminary Amendment, filed 8/14/03 has been considered.

#### ***Drawings***

3. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawings are dark and the handwritten words and element numbers are unclear. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 236. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

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the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

5. The disclosure is objected to because of the following informalities. Appropriate correction is required.
6. The abstract, lines 2-3 recite, "entering a value" wherein the lines that follow recite "entering values" and "entered values". This language is unclear in meaning since it is unclear whether one value or multiple values are entered.
7. Paragraph 0021, line 1, recites "30" in reference to Figure 3, however, it appears that it should state "300".

### ***Claim Objections***

8. Claims 6 and 20 are objected to because of the following informalities. Appropriate correction is required.
9. Claims 4, 8, 18, 22, "gage" should be corrected to read, "gauge".
10. Claims 6 and 20 recite, "the position" in line 4 and "the location" in lines 5-6. It is interpreted that these limitations refer to "the placement" recited in claim 4, therefore, it would be better if these limitations were written as "the placement" to avoid problems with lack of antecedent basis.

***Claim Rejections - 35 USC § 112***

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claim 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

13. Claim 1-22 use the words "selectively" and "selected". The use of these terms in the claim language render the claims vague and indefinite since it is unclear how something is "selectively entered" or "selected". There is no recitation of selecting a value based on some criteria or anything to give insight into how these steps are done.

14. Claim 1, line 4 recites, "entering a value corresponding to at least one parameter", however, further limitations recite, "on entering values" (line 6) and "the entered values" (line 7). The limitation in line 4 can be interpreted to mean that "a value" is entered that corresponds to one or more parameters of the cable plant, however, the further limitations of "the entered values" make it unclear as to whether one value will correspond to these one or more parameters or whether there is one individual value entered for each parameter of the cable plant entered. Further, it is unclear whether one value is entered as in line 4, or whether multiple values are entered as in line 6.

15. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: "determining" "the estimated cable loss for the cable plant". The claims recite "determining and displaying the estimated cable loss

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for the cable plant", and recite, "based on the entered values and an empirical model of cable loss". This step does not give an adequate understanding of how the estimated cable loss is "determined". "Values" are entered and an empirical model of cable loss is provided, but there is no interrelationship between the entered values and the empirical model. It is unclear whether the entered values are used in the empirical model to "determine" the estimated cable loss.

16. Claim 1 recites the limitation "the estimated cable loss" in line 6. There is insufficient antecedent basis for this limitation in the claim.

17. Claim 6 includes the limitations "greater than a selected length" and "less than the selected length". These claims are vague and indefinite since it is unclear what "a selected length" is and therefore, further unclear what would be "greater than a selected length" and "less than a selected length".

18. Claim 8 recites the limitation "the number of gage changes" in line 1. There is insufficient antecedent basis for this limitation in the claim.

19. Claim 9 recites the limitation "the cable spans" in line 4. There is insufficient antecedent basis for this limitation in the claim.

20. Claim 9 recites the limitation "the bridge taps" in line 6. There is insufficient antecedent basis for this limitation in the claim.

21. Claim 9 recites the limitation "the component loss values" in line 10. There is insufficient antecedent basis for this limitation in the claim.

22. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See

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MPEP § 2172.01. The omitted steps are: calculating component loss *values* for the cable spans and the bridge taps. Lines 8-9 are directed to calculating component loss values for *one of the cable spans and bridge taps*. Line 10 recites "the component loss values for the cable spans and bridge taps". Lines 8-9 recite only calculating the values for one cable span and bridge taps wherein line 10 appears to be directed to component loss values that have been calculated for multiple cable spans and bridge taps. It appears that the step of calculating component loss values for multiple cable spans and bridge taps is missing.

23. Claim 9, lines 10-11 are directed to "generating an estimated cable loss" by "combining" the "component loss values". It is unclear what "combining" means or is doing and how this would "generate" an estimated cable loss.

24. Claim 9, lines 12-14 are directed to "displaying the estimated cable loss" based on the entered values and an empirical model of cable loss. It is unclear what is meant by this limitation. Specifically, "based on the entered values and an empirical model" give no insight into how this estimated cable loss is displayed and the empirical model appears to have no interrelationship with either the estimated cable loss or the entered values.

25. The term "at least some of" in claim 11 is a relative term which renders the claim indefinite. The term "at least some of" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

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26. Claim 12 recites the limitation "the length of the bridge tap" in line 2. There is insufficient antecedent basis for this limitation in the claim. Because this claim is directed to the step of "calculating the component loss value" in claim 9 and there was no recitation of "the length of the bridge tap" before this limitation in claim 9, it was determined that this "length of the bridge tap" does not correspond to "bridge tap length" recited in line 14 of claim 9.

27. Claim 13, line 3 recites, "entering a value corresponding to at least one parameter", however, further limitations recite, "on entry of the values" (line 7) and "the entered values" (line 7). The limitation in line 4 can be interpreted to mean that "a value" is entered that corresponds to one or more parameters of the cable plant, however, the further limitations of "the entered values" make it unclear as to whether one value will correspond to these one or more parameters or whether there is one individual value entered for each parameter of the cable plant entered. Further, it is unclear whether one value is entered as in line 4, or whether multiple values are entered as in line 6.

28. Claim 13 recites the limitation "the estimated cable loss" in line 6. There is insufficient antecedent basis for this limitation in the claim.

29. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: "determining" "the estimated cable loss for the cable plant". The claims recite, "determining and displaying the estimated cable loss for the cable plant", and recite, "based on the entered values and an empirical model of cable loss". This step does not give an adequate understanding of



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how the estimated cable loss is "determined". "Values" are entered and an empirical model of cable loss is provided, but there is no interrelationship between the entered values and the empirical model. It is unclear whether the entered values are used in the empirical model to "determine" the estimated cable loss.

30. Claim 14 recites the limitation "the cable spans" in line 3. There is insufficient antecedent basis for this limitation in the claim.

31. Claim 14 recites the limitation "the bridge taps" in lines 5-6. There is insufficient antecedent basis for this limitation in the claim.

32. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: calculating component loss *values* for the cable spans and the bridge taps. Lines 9-10 are directed to calculating component loss values for *one of the cable spans and bridge taps*. Lines 11-12 recites "the component loss values for the cable spans and bridge taps". Lines 9-10 recite only calculating the values for one cable span and bridge taps wherein lines 11-12 appear to be directed to component loss values that have been calculated for multiple cable spans and bridge taps. It appears that the step of calculating component loss values for multiple cable spans and bridge taps is missing.

33. Claim 14, lines 12-13 are directed to "generating an estimated cable loss" by "combining" the "component loss values". It is unclear what "combining" means or is doing and how this would "generate" an estimated cable loss.

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34. Claim 14, lines 14-17 are directed to "displaying the estimated cable loss" based on the entered values and an empirical model of cable loss. It is unclear what is meant by this limitation. Specifically, "based on the entered values and an empirical model" give no insight into how this estimated cable loss is displayed and the empirical model appears to have no interrelationship with either the estimated cable loss or the entered values.

35. Claim 15, line 4 recites, "entering a value corresponding to at least one parameter", however, further limitations recite, "on entering values" (line 6) and "the entered values" (line 7). The limitation in line 4 can be interpreted to mean that "a value" is entered that corresponds to one or more parameters of the cable plant, however, the further limitations of "the entered values" make it unclear as to whether one value will correspond to these one or more parameters or whether there is one individual value entered for each parameter of the cable plant entered. Further, it is unclear whether one value is entered as in line 4, or whether multiple values are entered as in line 6.

36. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: "determining" "the estimated cable loss for the cable plant". The claims recite, "determining and displaying the estimated cable loss for the cable plant", and recite, "based on the entered values and an empirical model of cable loss". This step does not give an adequate understanding of how the estimated cable loss is "determined". "Values" are entered and an empirical model of cable loss is provided, but there is no interrelationship between the entered

values and the empirical model. It is unclear whether the entered values are used in the empirical model to "determine" the estimated cable loss.

37. Claim 15 recites the limitation "the estimated cable loss" in line 6. There is insufficient antecedent basis for this limitation in the claim.

38. Claim 20 includes the limitations "greater than a selected length" and "less than the selected length". These claims are vague and indefinite since it is unclear what "a selected length" is and therefore, further unclear what would be "greater than a selected length" and "less than a selected length".

39. Claim 21 recites the limitation "the number of gage changes" in line 3. There is insufficient antecedent basis for this limitation in the claim.

40. Due to the number of 35 U.S.C. 112, second paragraph rejections, the examiner has provided a number of examples of the claim deficiencies in the above rejection(s), however, the list of rejections may not be inclusive. Applicant should refer to these rejections as examples of deficiencies and should make all necessary corrections to eliminate the 35 U.S.C. 112, second paragraph problems and place the claims in proper format.

Due to the vagueness and a lack of a clear definition of the terminology and phrases used in the specification and claims, the claims have been treated on their merits as best understood by the examiner.

***Claim Rejections - 35 USC § 103***

41. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

42. Claims 1, 2, 4, 5, 8, 9-16, 18, 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over ADC DSL Systems, Inc. ("Cable Calculator User's Manual", ADC DSL Systems, Inc. February 21, 2001), herein referred to as ADC, in view of Lechleider et al (US Patent 6,091,713).

43. As to Claims 1, 13 and 15, ADC teaches: a method for modeling cable loss for a cable plant, the method comprising: identifying a service to be provided over the cable plant (page 3-1, Step 2, 2<sup>nd</sup> bullet; page 3-2, "Defining Type of Service", step 1; Figure 1, "Type of Service" menu), selectively entering a value corresponding to at least one parameter of the cable plant (page 3-2, "Defining Type of Service", step 2, a-d; page 3-

4, "Changing Options"), and on entering values, determining and displaying the estimated cable loss for the cable plant providing the service based on the entered values and an empirical model of cable loss that includes the number of bridge taps (page 3-2, "Defining Type of Service", step 2, d; page 5-2, Table 243).

44. As to Claims 2 and 16, ADC teaches: wherein determining the estimated cable loss comprises calculating the cable loss based on the entered values (page 3-2, "Defining Type of Service", step 2, d).

45. As to Claims 4 and 18, ADC teaches: wherein determining the estimated cable loss comprises: calculating a first cable loss based on cable gage and cable length for each span (page 5-2, "Calculate Cable Span Loss"), calculating a second cable loss associated with the number of bridge taps (page 5-2, "Number of Bridged Taps" and "Calculate Total Bridged Taps"), calculating a third cable loss associated with changes in gage between cables in the cable plant (page 5-2, "Number of Cable Gauge Changes" and "Calculate Total Change Loss"), and adding the first, second and third cable losses (page 5-2, "Calculate Total Span Loss").

46. As to Claims 8 and 22, ADC teaches: wherein calculating the third cable loss comprises assigning a cable loss value equal to the number of gage changes times a selected cable loss (page 5-2, "Number of Cable Gauge Changes" and "Calculate Total Change Loss").

47. As to Claims 9 and 14, ADC teaches: a method for modeling cable loss for a cable plant, the method comprising: identifying a service to be provided over the cable plant (page 3-1; Step 2, 2<sup>nd</sup> bullet; page 3-2, "Defining Type of Service", step 1; Figure

1, "Type of Service" menu); selectively entering a first set of values corresponding to the cable spans of the cable plant (Figure 1, "Span Cable Lengths" 26AWG-17AWG; page B-1, Descriptions for "17 AWG/1.2mm Span Cable Length"- "26 AWG/.40mm Span Cable Length"); selectively entering a value corresponding to the bridge taps of the cable plant (Figure 1, "No. of Bridge Taps"; page B-2, "No. of Bridged Taps"); and on entering each one of the first set values corresponding to cable spans and a second value corresponding to the bridge taps, calculating component loss values for one of the cable spans (page 5-2, "Calculate Cable Span Loss") and the bridge taps (page 5-2, "Calculate Total Bridged Taps"); combining the component loss values for the cable spans and the bridge taps to generate an estimated cable loss (page 5-2, "Calculate Total Span Loss"); and displaying the estimated cable loss for the cable plant providing the service based on the entered values and an empirical model of cable loss (Figure 1, "Total Circuit Parameters", "Loss").

48. As to Claim 10, ADC teaches: wherein identifying a service comprises identifying at least one of HDSL2 and HDSL4 (page 4-66; page 4-1, sentence 1).

49. As to Claim 11, ADC teaches: wherein displaying the estimated cable loss comprises displaying the estimated cable loss on the same screen of a graphical user interface used to selectively enter at least some of the first and second set of values (Figure 1; page 1-1, paragraph 2, sentence 1; page 3-2, "Defining Type of Service", step 2).

50. ADC does not expressly teach: (claims 1 and 15) the empirical model including data on losses affected by bridge tap placement and bridge tap length in the cable

plant; (claims 4 and 18) the calculation of the second cable loss associated with at least one bridge tap based on at least one of bridge tap placement and length; (claims 5 and 19) wherein calculating the second cable loss comprises: determining entered length and placement values for the bridge tap; and calculating the second cable loss using a formula based on at least one of length and placement of the bridge tap; (claim 9) entering a "set" of values corresponding to the bridge taps; (claim 12) wherein calculating the component loss value for the bridge tap comprises selecting a formula based on the length of the bridge tap .

51. Lechleider et al teaches that the transmission characteristics of a subscriber loop where ADSL may be deployed depends on the length of the copper line, its gauge, quality of splices, integrity of shielding, load coils, impedance miss-matches, interference and also the presence of bridge taps, wherein the injection of ingress noise, distortion and echo occurs at locations of these bridged taps on the subscriber loop, wherein these factors limit the data transfer or information rate at which a subscriber may be connected to a broadband service provider over the subscriber loop and are a major cause of connection problems subscribers currently face in making data connections via the public switched telephone network (column 1, line 57-column 2, line 13). Therefore, Lechleider et al teaches a method to estimate the performance of a broadband transmission, such as an ADSL transmission on a subscriber loop that enables the efficient determination of the probability of successfully deploying ADSL to a subscriber and determine the viability of deploying ADSL in entire areas (column 3, lines 50-59) wherein the locations and lengths of multiple bridge taps are used in the

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calculation of the electrical characteristics of the local subscriber loop using a formula based on the length and placement of the bridged taps (column 8, line 41-column 9, line 34).

52. ADC and Lechleider et al are analogous art since they are both directed to the characterization of the electrical properties of a subscriber loop to determine the viability of deploying a transmission service to an area.

53. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the modeling of cable loss that includes the number of bridged taps as taught by ADC to further include the inclusion of information relating to the location and length of multiple bridged taps on the subscriber loop and calculating loss using a formula based on at least one of length and placement of a bridged tap as taught by Lechleider et al since Lechleider et al teaches that the transmission characteristics of a subscriber loop where ADSL may be deployed depends on the length of the copper line, its gauge, quality of splices, integrity of shielding, load coils, impedance miss-matches, interference and also the presence of bridge taps, wherein the injection of ingress noise, distortion and echo occurs at locations of these bridged taps on the subscriber loop, wherein these factors limit the data transfer or information rate at which a subscriber may be connected to a broadband service provider over the subscriber loop and are a major cause of connection problems subscribers currently face in making data connections via the public switched telephone network (column 1, line 57-column 2, line 13) and teaches a method to method to estimate the performance of a broadband transmission, such as an ADSL transmission on a subscriber loop that



enables the efficient determination of the probability of successfully deploying ADSL to a subscriber and determine the viability of deploying ADSL in entire areas (column 3, lines 50-59).

54. Claims 3 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over ADC and Lechleider et al.

55. ADC and Lechleider et al teach modeling cable loss for a cable plant and displaying the estimated cable loss for the cable plant.

56. ADC and Lechleider et al do not expressly teach wherein displaying the estimated cable loss comprises comparing the estimated cable loss with a threshold value, using a first color when displaying the estimated cable loss above the threshold and a second color when displaying the estimated cable loss below the threshold.

57. However, Examiner takes Official Notice that it is known in the art to compare a value to a threshold value, to display a value of data above a threshold value with a first color and to display a value of data below a threshold value with a second color (US Patent 6,822,302: Figure 6 and description, column 8, lines 6-12; US Patent 5,825,284: column 2, lines 55-59, column 13, line 66-column 14, line 4; US Patent 5,512,823: column 3, lines 17-22; US Patent Application Publication 2002/0115046: claim 8).

58. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the display of the estimated cable loss for the cable plant as taught by ADC and Lechleider et al to compare and display the estimated cable loss with a threshold value, using a first color when displaying the estimated cable loss

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above the threshold and a second color when displaying the estimated cable loss below the threshold since Examiner takes Official Notice that it is well known in the art to display data values using colors to show that they are above or below threshold values.

### ***Conclusion***

59. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

60. Wyar (US Patent 6653844) teaches a system and method for testing and displaying the abnormalities, includes opens, shorts, bridged-taps and wet sections, of a copper pair line for xDSL service use, the abnormalities are amplified and normalized so as to be displayed within a predetermined observation range.

61. Liu et al (US Patent 6266395) teaches a method and apparatus for single-ended qualification of subscriber loops for xDSL services is described, including the entering of values of gauge length, installation method, insulation method and taking into account the presence of bridge taps in a subscriber loop.

62. Rahamim et al (US Patent 6782082) teaches evaluating the performance of a subscriber loop and identifying impairments on the communications link.

63. Smith et al (US Patent 7116760) teaches the creation of a plant map based on characteristics of a copper pair line and using the characteristics of the plant map to analyze and qualify a copper pair line.

64. Manica et al (US Patent 6463126) teaches a method for qualifying a local loop that includes determining an end to end path that individually identifies the loop, gathering descriptive data, and determining the qualification result.

65. Jollota et al (US Patent 6341159) teaches a processing mechanism that accurately and reliably identifies the locations and amplitudes of remote noise sources for each of the wirelines by determining attenuation along and the lengths of the wirelines, and then modifying values of noise measurements in accordance with the determined attenuation and length values, so as to extrapolate the amplitudes of the noise at their identified source locations.

66. Tektronix, Inc., ("Telephone Access Network Measurements", obtained from [www.tek.com](http://www.tek.com), 1998) teaches finding bridge taps and laterals in a phone network and upgrading a cable plant for DSL service and finding an unknown velocity of propagation for a cable.

67. Galli et al ("Loop Makeup Identification Via Single Ended Testing: Beyond Mere Loop Qualification", IEEE Journal on Selected Areas in Communications, Vol. 20, No. 5, June 2002) teaches the analysis of effects of medium discontinuities in a subscriber loop.

68. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary C. Jacob whose telephone number is 571-272-6249. The examiner can normally be reached on M-F 7AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

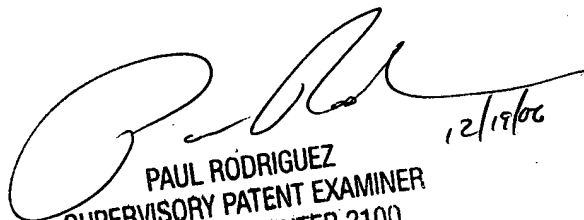
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Mary C. Jacob  
Examiner  
AU2123

MCJ  
12/13/06

  
12/13/06  
PAUL RODRIGUEZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100